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William S Frommer
Frommer Lawrence & Haug
745 Fifth Avenue
New York, NY 10151

EXAMINER	
NGUYEN, LUONG TRUNG	
ART UNIT	PAPER NUMBER
2622	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/517,500	KONDO ET AL.	
	Examiner	Art Unit	
	LUONG T. NGUYEN	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 15-49* is/are pending in the application.

4a) Of the above claim(s) *3,4,8-13,18,19 and 30* is/are withdrawn from consideration.

5)☒ Claim(s) *20-28 and 32-49* is/are allowed.

6)☒ Claim(s) *1-2,5-7,15-17,29,31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's argument of election requirement in the reply filed on 2/19/2008 and 6/3/2008 is acknowledged.

2. Applicant's election without traverse of Species IV upon which claims 1-2, 5-7, 14-17, 20-22, 29, 31-36, 39-41, 47 and 49 read in the reply filed on 6/3/2008 and 2/19/2008 (now read as Species II, illustrated in Figs. 3, 14-17, 25 and on which claims 1-2, 5-7, 14-17, 20-22, 29, 31-36, 39-41, 47 and 49 read) is acknowledged.

3. Claims 3-4, 8-13, 18-19, 30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/3/2008 and 2/19/2008.

Response to Arguments

4. Applicant's arguments with respect to claims 1, 2, 5-7, 15-17, 29, 31 filed on 12/19/2008 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 2, 5, 7, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein (US 7,061,532) in view of Suzuki (US 5,896,171).

Regarding claim 1, Silverstein discloses an image-capturing apparatus comprising:

an image-capturing optical unit micro-lens 16, figure 1, column 3, lines 1-16) which reflects or transmits a light beam from an object;

an image-capturing driver (actuator 22, figure 1, column 3, lines 59-67) for driving the image-capturing optical unit based on the control operation by the image-capturing controller; and

at least one image-capturing unit (light sensor array 20, figure 1, column 3, line 36 – column 4, line 8) which receives the light beam from the object entering via the image-capturing optical unit operating periodically so as to capture an image of the object.

Silverstein fails to specifically disclose an image-capturing controller for controlling the image-capturing optical unit to allow the image-capturing optical unit to operate in a periodical manner. However, Official Notice is taken that such image-capturing controller is well known in the art as a way to control an operation of an actuator. It would have been obvious to include such image-capturing controller into the device of Silverstein in order to control the operation of actuator 22.

Silverstein fails to specifically disclose wherein the image-capturing controller multiplexes and outputs drive data for controlling the image-capturing optical unit and image data captured by the at least one image-capturing unit. However, Suzuki teaches a video signal processing apparatus to multiplex a video and control signal, in which the control data (such as

focusing control, a zooming control) is multiplexed to the video signal and the multiplexed signal is transmitted through a cable for transmitting the video signal (figures 1A-1B, 4A-4B, column 4, lines 55-67; column 5, lines 15-67; column 2, lines 7-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Silverstein by the teaching of Suzuki in order to provide a video signal processing apparatus which can realize a function for multiplexing a data signal to a video signal and transmitting a multiplexed signal by a circuit of a cheap and simple construction of a small scale (column 3, lines 38-42).

Regarding claim 2, Silverstein discloses wherein the image-capturing optical unit changes an optical path of the light beam from the object (noted that since the actuator 22 actives and moves the micro-lens array 16 in both horizontal direction as indicated by arrow line 24, the optical path of light beam from the object is changed, figure 1, column 3, line 59 – column 4, line 8).

Regarding claim 5, Silverstein discloses wherein the image-capturing optical unit comprises a lenticular-lens (lenticular array 16, figures 1-2, column 3, lines 19-29) assembly in which a plurality of semi-cylindrical lenses are arrayed,

wherein the image-capturing controller controls the lenticular-lens assembly in a periodical manner such that the semi-cylindrical lenses in the lenticular-lens assembly are shifted periodically (column 3, line 59 - column 4, line 8).

Regarding claim 7, Silverstein discloses wherein the semi-cylindrical lenses in the lenticular-lens assembly are arrayed parallel to one another in the same plane while each semi-cylindrical lens extends longitudinally in the vertical direction (figure 2), and

wherein the image-capturing controller oscillates the lenticular-lens assembly horizontally in a periodical manner (column 3, line 59 – column 4, lines 8).

Claim 31 is a method claim of apparatus claim 1. Therefore, see Examiner's comment regarding claim 1.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein (US 7,061,532) in view of Suzuki (US 5,896,171) further in view of Vick (US 4,993,790).

Regarding claim 6, Silverstein and Suzuki fail to specifically disclose the image-capturing optical unit further comprises slits through which the light beam emitted from the object and transmitted through the semi-cylindrical lenses passes. However, Vick discloses a lenticular screen, which comprises a split plate 46 through which the light beam emitted from the object and transmitted through the lenticular 48 (figure 2, column 7, lines 10-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Silverstein and Suzuki by the teaching Vick in order to allow light rays from an image focused to viewer's eyes.

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein (US 7,061,532) in view of Suzuki (US 5,896,171) further in view of Ogino (US 6,762,794).

Regarding claim 15, Silverstein and Suzuki fail to specifically to disclose a display device. However, Ogino discloses an image pick-up apparatus for stereoscope, in which images captured by stereo camera 1 is displayed on image display 2 (figure 1, column 5, lines 30-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Silverstein and Suzuki by the teaching Ogino in order to display an image for viewing.

9. Claims 16, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein (US 7,061,532) in view of Suzuki (US 5,896,171) and Ogino (US 6,762,794) further in view of Hamagishi (US 5,855,425).

Regarding claim 16, Silverstein, Suzuki and Ogino fail to disclose wherein the display device comprises:

at least one light-emitting unit for emitting a light beam corresponding to the image of the object captured by said at least one image-capturing unit;

a display optical unit for reflecting or transmitting the light beam emitted from said at least one light-emitting unit;

a display controller for controlling the display optical unit to allow the display optical unit to operate in a periodical manner; and

a display driver for driving the display optical unit based on the control operation by the display controller.

However, Hamagishi discloses a stereoscopic display, which comprises:

at least one light-emitting unit (first projector 1L, second 1R, figure 1, column 4, lines 7-35) for emitting a light beam corresponding to the image of the object captured by said at least one image-capturing unit;

a display optical unit (screen 2, figure 1, column 4, lines 19-67) for reflecting or transmitting the light beam emitted from said at least one light-emitting unit;

a display controller (driving and control unit 12, figure 1, column 4, lines 52-67) for controlling the display optical unit to allow the display optical unit to operate in a periodical manner; and

a display driver (driving and control unit 12, figure 1, column 4, lines 52-67) for driving the display optical unit based on the control operation by the display controller.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Silverstein, Suzuki and Ogino by the teaching of Hamagishi in order to display a stereoscopic image.

Regarding claim 29, Silverstein, Suzuki, Ogino and Hamgishi fail to specifically disclose an output unit for outputting drive data and an image data of the object, and wherein the display controller allows the display driver to drive the display optical unit based on the drive data. However, Official Notice is taken that it is well known in the art to include such output unit into the device of Silverstein in order to read out image data for further processing such as displaying on an image display apparatus.

10. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein (US 7,061,532) in view of Suzuki (US 5,896,171) and Ogino (US 6,762,794) and Hamagishi (US 5,855,425) further in view of Veligdan et al. (US 6,755,534).

Regarding claim 17, Silverstein, Suzuki, Ogino and Hamagishi fail to disclose wherein the display device further comprises a diffuser which diffuses the light beam corresponding to the image of the object received via the display optical unit, which operates in a periodical manner, so as to display the image of the object. However, Veligdan et al. discloses a prismatic optical display, which comprises diffuser 24a (figure 3, column 6, lines 20-28, 48-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Silverstein, Ogino, Suzuki and Hamagishi by the teaching of Veligdan et al. in order to diffuse light beam corresponding to an image.

Allowable Subject Matter

11. Claims 20-28, 32-35, 36-48, 49 are allowed.

Noted that the withdrawn claims 23-28, which depends from claim 20, are rejoined to claim 20 and allowed since claim 20 is allowed.

Noted that the withdrawn claims 37-38, 42-46, 48, which depends from claim 36, are rejoined to claim 36 and allowed since claim 36 is allowed.

Regarding claim 20, the prior art of the record fails to show or fairly suggest an image-capturing apparatus comprising:

wherein the display optical unit comprises a second lenticular-lens assembly having the same structure as the first lenticular-lens assembly, and

wherein the display controller controls the second lenticular-lens assembly in a periodical manner such that the semi-cylindrical lenses in the second lenticular-lens assembly are shifted periodically in phase with the corresponding semi-cylindrical lenses in the first lenticular-lens assembly, in combination with other claim elements.

Claims 21-28 are allowed as dependent from claim 20.

Regarding claim 32, the prior art of the record fails to show or fairly suggest a display apparatus for displaying an image of an object, comprising:

wherein the display controller controls the display optical unit according to drive data multiplexed and outputted by an image-capturing apparatus.

Claims 33-35 are allowed as dependent from claim 32.

Regarding claim 36, the prior art of the record fails to show or fairly suggest a display apparatus for displaying an image of an object comprising:

wherein the display controller controls the display optical unit so as to allow the display optical unit to operate in the periodical manner as the image-capturing optical unit, in combination with other claim elements.

Claims 37-48 are allowed as dependent from claim 36.

Claim 49 is a method claim of apparatus claim 32. Therefore, claim 49 is allowed for the reasons given in claim 32

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571)272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David L. Ometz/
Supervisory Patent Examiner, Art Unit 2622

/L. T. N./
3/13/09